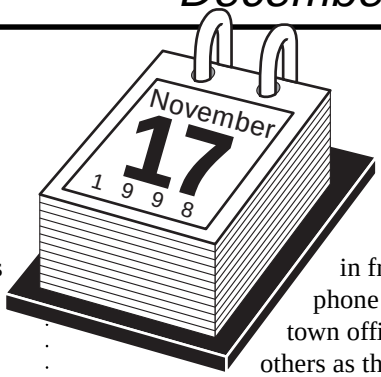
Vermont EMS Today

December 1998

From the Director

History in the Making



At precisely 0905 hours on Tuesday, November 17, 1998, a piece of emergency services history in Vermont was written. Our state became the first in the nation to implement digital, statewide, enhanced 9-1-1 calling service. In my twenty-five years of EMS experience, the implementation of this system is the single most significant improvement I can recall.

There are lots of examples of system improvements that take years to implement. Usually progress on major initiatives happens over an extended timeframe. The evolution of ambulance vehicle design from the Cadillacs of the 1960s to the modular units of today is one example. The integration of injury prevention into EMS is another that has been unfolding over the past few years.

In reality, the enhanced 9-1-1 system has been under construction for several years. Towns have been naming roads and assigning locatable addresses. From an emergency response perspective, many squads have seen local improvement as streets began to be marked and sequential house numbers were assigned. The database of addresses, phone numbers and emergency service providers has been compiled and verified. But then, suddenly, the system that many of us have talked about for years became reality. At 0900 hrs. emergency calls around Vermont were going to local 9-1-1 dispatchers or 7-digit emergency numbers. Five minutes later telephone systems around the state began turning on enhanced 9-1-1 capability. Within three hours, every phone line in Vermont was live and on-line.

Suddenly, the system that many of us have talked about for years became reality.

Standing in the Williston Public Safety Answering Point (PSAP), there was a palpable air of both excitement and tension. Seven call takers and several supervisors were on hand to start taking the 9-1-1 emergency calls for over 80% of the state's population. Since early in the morning test calls had been coming in from telephone companies, town offices and others as they prepared for the switchover to occur.

At 0917 hrs. call taker Stacy Vogt answered the first enhanced 9-1-1 emergency call. A woman had fallen in southern Vermont and her elderly husband wasn't able to get her off the floor. Within seconds the address and phone number of the call were verified and passed to the local EMS dispatcher. While the information was being relayed to dispatch, the caller accidentally hung up on the PSAP. Stacy immediately attempted to reconnect, but the caller's line was busy. Seconds later the caller reconnected with a second 9-1-1 call taker by redialing 9-1-1 after realizing he had hung up. The second call taker stayed on the line to provide medical pre-arrival instructions until EMS was on the scene about eight minutes later.

During the next few hours more calls came in. Several minor motor vehicle crashes were reported. A woman called to report an intruder in her home. Frequent test calls to verify addresses

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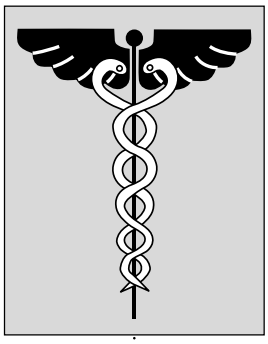
Inside

From The Medical Advisor

Sometimes It's Hard to Spot the Change!



I recently returned from Asheville, North Carolina and a meeting of the National Association of State EMS Directors (NASEMSD). The meeting was filled with interesting information, insights and thought-provoking glimpses at our EMS systems. Importantly for me, it brought perspective on what all of us do.

As I spoke with Dr. Jeff Michael, an administrator from the National Highway Traffic Safety Administration, he expressed some frustration and a desire to measure the changes that are occurring from our investments in EMS. Dr. Michael is a great guy, a capable researcher and public official who constantly wants to invest time, money and energy in pursuits that will improve EMS in the United States.

Dr. Michael addressed NASEMSD and shared the need for more research, published studies and tools to assess what we are doing. In reply to his thoughtful comments, Dan Manz reflected that often for us in the trenches, it can be difficult to spot our progress and the changes. We, who deal with issues daily and often over long periods of time, are so invested and close to the issues that we may not see "the big picture" and notice how far we have come.

After the prepared remarks of Dr. Michael, I approached him and offered that another way we might wish to look at some of the important changes is through the quality improvement systems that each of us is implementing and using. While studies of these systems are seldom published, they are often quite important and do effect change, however slowly.

Dan Manz reflected that often for us in the trenches, it can be difficult to spot our progress and the changes.

As I returned to Vermont, I was contacted by an EMS provider who left our system about six or seven years ago for a much larger, and some would say, more sophisticated system in the West. She observed that today, that system is struggling to attain things that were commonplace practice here those many years ago. Perspective is a useful thing.

In closing my message for this newsletter, I wish everyone the very best of holiday seasons filled with good health, happiness and fulfillment. I challenge you to join me in looking at where we have been and where we are going. With New Year resolutions fast closing on the horizon, I ask you to join me in reflecting upon how it is that we mark our changes, positive and negative. We need to spot the changes; for change is inevitable and hopefully welcome. It is my personal opinion that we in Vermont have much to be thankful for; I count each of you and the outstanding work that you do among the finest accomplishments that our state has to offer.

—Wayne J.A. Misselbeck, M.D.
State Medical Advisor

Vermont EMS Today
is published quarterly as a service for Vermont's emergency medical providers. Suggestions, comments and news items are always welcome. Write or call Leo J. Grenon, Vermont Dept. of Health, 108 Cherry Street, Box 70, Burlington, VT 05402. (802) 863-7310 or 1-800-244-0911 (in Vermont only). Email: VTEMS@VDH.STATE.VT.US

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This publication can be obtained in other forms: 1-800-244-0911, 1-802-863-7310; ask for Leo Grenon. If you want to reprint articles from this or any Vermont EMS Today publication, please contact Leo Grenon at the above numbers.

From the Director—

History in the Making

CONTINUED FROM PAGE 1

and emergency providers were answered. Not everything went smoothly. Some addresses came up with inaccurate information on the call taker's screen. In a few cases there was no emergency service provider information displayed when the call was answered. Despite these few technical glitches, the system was working. In every case, the call taker had the training and information resources to route emergency calls to the proper dispatcher.

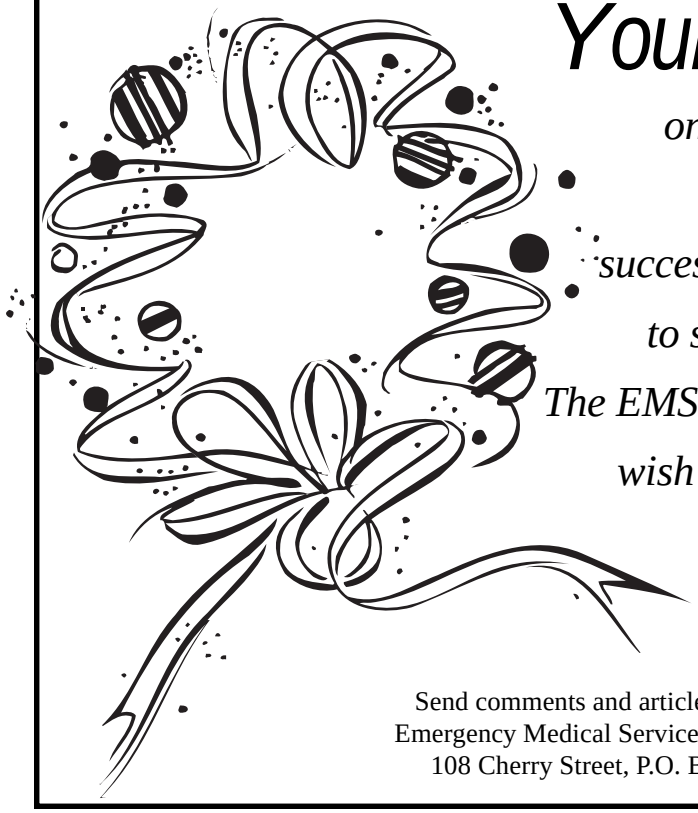
By late afternoon, the system was settling down to routine business. A call taker was preparing to give pre-arrival instructions to the father of a choking child when he heard the infant begin to cry in the background. Another caller was assisted with the management of a relative possibly having a stroke. Two reports of cats in trees were received. At no time did the system become overloaded. Average call handling time was under three minutes. All in all, a very smooth beginning.

There are lots of people and groups who should get a big thank you for this achievement. At the risk of overlooking someone, here's my list:

- The Vermont Legislature and our Governor who together created the authority and the funding for implementation of statewide enhanced 9-1-1;
- Evelyn Bailey, the E-9-1-1 board and the E-9-1-1 staff who coordinated every aspect of putting this system into place;
- The local community officials and regional planning commissions who did the road naming, addressing and data collection;
- The telephone companies that worked with the E-9-1-1 board to build the necessary database and assure the technology that is the backbone of this system;
- The postal officials who have supported locatable addressing and figured out how to deliver mail to new addresses all over the state;
- Every fire, police and EMS agency in Vermont that for years has advocated for this system as an improvement to the delivery of emergency services;
- The Vermont Department of Public Safety and the municipalities that have now assumed the daunting task of operating the E-9-1-1 PSAPs, and;
- The taxpayers of Vermont who have been willing to invest in this major improvement to public health and safety.

This improvement to emergency response is truly a landmark event. I am confident that years from now we will reflect on November 17, 1998 as the day when our ability to reach those most in need of our services took an unparalleled leap forward. ■

—Dan Manz, EMS Director



Your support has made this newsletter one that is complimented nationwide. Thank you for giving it another successful year, and remember, don't hesitate to send in announcements, articles, etc. The EMS staff at the Vermont Department of Health wish you and your loved ones a happy and safe holiday season and 1999.

— DAN MANZ, EMS DIRECTOR

Send comments and articles to: Vermont Department of Health
Emergency Medical Services, Attn: Leo J. Grenon, *VT EMS Today*
108 Cherry Street, P.O. Box 70, Burlington, Vermont 05402

11th Annual Vermont EMS Conference
Awards Criteria

New!

It seems just a short time ago when the first awards ceremony was held at our original Vermont EMS Conference in 1989 in Rutland. Since that time, 70 of Vermont's EMS providers have been recognized for their outstanding contributions to EMS. This year the awards criteria have changed to allow for greater recognition of the people and EMS organizations that serve our state. We have added three additional categories and changed the titles and criteria of some of our previous awards criteria. Additionally, we have developed helpful nomination forms to assist those wishing to submit nominations. These may be found in the 1999 EMS Conference Brochure in January. Additional forms and criteria are available on the WEB at ***http://www.state.vt.us/health/emstoday.htm***

One quality nomination letter is of greater significance then several poorly crafted ones. Leave yourself enough time to write a nomination letter that is easily read and thoroughly describes the accomplishments of your nominee. It is a rare occasion that we take the time to recognize accomplishments in EMS; take the time to let us know. Below are a few helpful hints to consider when submitting a nomination.

- ★ Remember, awards are based on an individual's or service's overall contribution to the field of EMS. Avoid focusing on single acts of heroism.
- ★ Make sure to completely identify the individual or service at some point in the nomination and the exact award you wish them to be nominated for. Frequently we receive letters that do not specify the award category.
- ★ Before writing the letter, make a simple outline of your thoughts. Jumbled information is confusing and often clouds the characterizations that recognize outstanding members.
- ★ When you write your nomination, keep in mind that it will be read by several committee members who may have no familiarity with the person or service.
- ★ And, finally, have someone proofread your work.

EMS Awards Information

The annual Vermont EMS awards are a public opportunity to recognize our state's finest EMS professionals. In many ways, these are the "people's choice" awards. Nominations come from colleagues, friends, other public safety agencies, municipal officials and grateful patients. Selection of the award recipients is done by committees of peers, including the 1998 award winners. Nominations for this year's 1999 awards program must be received by Friday, February 19, 1999.

FIRST RESPONDER (EMERGENCY CARE ATTENDANT) OF THE YEAR

New!

- ★ Is a currently certified Vermont ECA.
- ★ Has made an exceptional contribution to his/her EMS service.
- ★ Has strong and consistent clinical skills at his/her certification level.
- ★ Has made an outstanding contribution to the EMS system either within or outside his/her squad or service.

EMT-BASIC OF THE YEAR

- ★ Is a currently certified Vermont EMT-Basic.
- ★ Has made an exceptional contribution to his/her EMS service.
- ★ Has strong and consistent clinical skills at his/her certification level.
- ★ Has made an outstanding contribution to the EMS system either within or outside his/her squad or service.

EMT-INTERMEDIATE OF THE YEAR

New!

- ★ Is a currently certified Vermont EMT-Intermediate.
- ★ Has made an exceptional contribution to his/her EMS service.
- ★ Has strong and consistent clinical skills at his/her certification level.
- ★ Has made an outstanding contribution to the EMS system either within or outside his/her squad or service.

EMT-PARAMEDIC OF THE YEAR

New!

- ★ Is a currently certified Vermont EMT-Paramedic.
- ★ Has made an exceptional contribution to his/her EMS service.
- ★ Has strong and consistent clinical skills at his/her certification level.
- ★ Has made an outstanding contribution to the EMS system either within or outside his/her squad or service.

EMS EDUCATOR OF THE YEAR

New!

- ★ Has made a recognized contribution to the Vermont EMS system through outstanding organization or delivery of education to EMS providers.

EMS LEADER OF THE YEAR

New!

- ★ Is a leader of either a Vermont licensed ambulance service, first responder service, EMS district, hospital, or the community.
- ★ Has played a major role in either EMS system development or the development of an individual EMS organization.
- ★ Has demonstrated leadership.
- ★ Has represented the EMS system in a positive manner to other groups and organizations.

EMERGENCY NURSE OF THE YEAR

- ★ Is currently a licensed nurse at any level.
- ★ Has made an exceptional contribution to the Vermont EMS system.

EMERGENCY PHYSICIAN OF THE YEAR

- ★ Is a currently licensed physician.
- ★ Has made an exceptional contribution to the Vermont EMS system.

New!

FIRST RESPONDER SERVICE OF THE YEAR

- ★ Is a currently licensed first responder service based in Vermont. (Licensure level is not to be considered.)
- ★ The service has made an outstanding contribution in the past year to public education.
- ★ The service maintains positive, outstanding relations with the communities it serves and the local EMS District Board.
- ★ The service takes meaningful and visible steps to assure the professionalism of personnel and quality of patient care.

★ The service has identified areas in which performance could be improved, and has taken organized steps to improve those areas in the past 2-3 years. (Examples could be: response times, quality improvement programs, advanced levels of training)

AMBULANCE SERVICE OF THE YEAR

★ Is a currently a Vermont licensed ambulance service. (Licensure level is not to be considered.)
★ The service has made an outstanding contribution in the past year to public education.
★ The service maintains positive, outstanding relations with the communities it serves and the local EMS District Board.
★ The service takes meaningful and visible steps to assure the professionalism of personnel and quality of patient care.
★ The service has identified areas in which performance could be improved, and has taken organized steps to improve those areas in the past 2-3 years. (Examples could be: response times, quality improvement programs, advanced levels of training)

VERMONT SAFE KIDS INJURY PREVENTION AWARD

★ Is an individual currently affiliated with an emergency medical services district or a licensed ambulance or first responder service in Vermont.
★ Has made an exceptional contribution to his/her organization in the area of injury prevention or public education.
★ Has made an exceptional contribution to the promotion of injury prevention and public education in emergency medical services.
★ Has made an exceptional contribution to his/her community in the area of injury prevention or public education.

VERMONT AMBULANCE ASSOCIATION EDUCATION SCHOLARSHIP AWARD

The Vermont Ambulance Association is pleased to offer a scholarship in the amount of $500 available to any member in good standing of a licensed VT EMS organization. This is to further the individual's education in the provision or management of medical care. Recipients will be chosen by the VAA. Submit written nominations to the VT EMS office.

If you have any questions, please contact Robert Schell at 1-800-244-0911 or (802) 836-7310. ■

— Robert W. Schell, Senior Field Specialist

Number of people holding Vermont EMS certification as of 6/30/98:

ECA		1047
EMT–Basic	(does not include advanced levels)	1099
EMT–I		785
EMT–P		65
Total EMTs at all levels:		**1,953**

Vermont EMS District #1
in conjunction with the Kiwanis Club of Franklin County

PRESENTS A

Pediatric Trauma Management Program

Saturday, February 13, 1999
Missisquoi Valley Union High School, Swanton
8 a.m. to 4 p.m.

The cost is $40 for EMS personnel in EMS District #1 and $50 for personnel outside EMS District #1. The registration fee includes breaks and lunch.

The program is directed by Richard Murphy, M.D., Assistant Professor of Surgery, Tufts University School of Medicine, Dept. of Surgery, New England Medical Center, Boston, MA. The program is open to all EMS personnel, nurses (nurses earn 6 contact hours), or other interested health care providers.

Make checks payable to the *Kiwanis Club of Franklin County.*
Mail your registration with payment enclosed to: Sandy Fiaschetti, VT EMS District #1 P.O. Box 1217, St. Albans, VT 05478
For further information contact Sandy Fiaschetti at 527-1244.

Registration Form

NAME

ADDRESS

CITY/STATE/ZIP

PHONE

EMS SQUAD OR OTHER HEALTH CARE AFFILIATION

Training UPDATE

Changes in Recertification

Since the changes in Vermont's Rules in 1997, there have been a lot of questions regarding EMT recertification. A number of people have called the EMS Office to find out more about such things as when they need to submit continuing education (CE), what kind of CE they need to get, which form they should complete and when they need to take the recertification exam.

This edition of the *Training Update* will answer many of those questions.

When does my certification expire?

Your certification expires on the last day of the month printed on your card. If a year has gone by since you got your card and it has an expiration date one year in the future, do NOT send CE to the EMS Office now. Your card is good for another year.

When am I due to take the recertification exam?

You are due to take the recertification exam when your certification expires. Since the 1997 revision of the EMS Rules, EMT recertification is no longer required every year with three year testing. The Department of Health now issues EMT certifications good for two years.

This means you will submit your CE and take the recertification exam every two years.

How do I recertify?

A month or two before your certification is due to expire, the EMS Office will send you a notice listing the exams scheduled in the near future. You will also receive a certification exam application, which you need to complete and return with your completed CE form. If you do not have a CE form, call the EMS Office to request one.

What is the new recert exam like?

The new recertification exam (also called the refresher exam) is based on the 1996 national standard EMT-B refresher curriculum. You can obtain the curriculum free of charge at the National Highway Traffic Safety Administration's web site: *www.nhtsa.dot.gov/people/injury/ems.*

The written exam has 120 multiple choice questions. The practical exam has three stations that combine many skills into three realistic scenarios. An applicant is allowed three attempts on both the written and practical certification exams, if necessary. For more information about the exam, see the article "The New EMT-B Refresher Exam" in the June 1998 issue of *Vermont EMS Today*.

Can any recertifying EMT take the exam?

To be eligible to take this exam, you must have taken either an EMT-B transition course or an EMT-B course using the 1994 curriculum. All approved EMT-B courses that started after January 1, 1996 in Vermont have used the 1994 curriculum.

How can I prepare for the new recert exam?

To prepare for the written exam, you should review the learning objectives from the refresher course or the EMT-B course, consider taking a practice exam (available from EMS publishers) and brush up on areas you are rusty in by reading continuing education articles and EMT texts. To prepare for the practical exam, you should review the learning objectives from the refresher course or the EMT-B course, go over the performance criteria for the stations (available from your training officer) and practice your skills.

Which CE form should I complete to recertify?

Use the form that came with your card. If you received a one-year card, you should have received an old form that requires 15 hours of EMT-Basic CE and 5 hours of EMT- Intermediate CE. If you received a two-year card, you should have received a new form that requires 24 hours of EMT-Basic CE and 10 hours of EMT-Intermediate CE. The 24 required hours of EMT-Basic CE can be obtained either through continuing education or through an approved EMT-B refresher course. If you received the wrong form or can't find the form, call the EMS Office to request another.

What is a refresher course?

A refresher course is an educational program approved by the Department of Health. It follows the national standard EMT-B refresher curriculum and reviews topics from the EMT-Basic course. The minimum course length is 24 hours, sixteen of which must be in certain areas. This allows the course coordinator at least eight hours to go over areas where students need more practice. The eight hours of elective can cover anything in the EMT-B curriculum. This would include, for example, splinting, medical emergencies and rapid extrication, but not rope rescue or EKG rhythm recognition.

Do I have to attend a refresher course?

Vermont does not require you to complete a refresher course if you are renewing your certification within a year of its expiration. The National Registry, however, requires a refresher course to renew a National Registry card. EMTs reregistering in 1998 and 1999 may substitute an EMT-B transition course for the refresher course.

An EMT who does not complete a refresher course needs to get continuing education that meets the content and objectives of a refresher course. This means squad training officers should plan their training sessions so that all of the content and objectives of the refresher course are covered at least every two years. Since most squads meet at least once a month to train and since only 24 hours are required, it should be relatively easy to accomplish this. Some training officers have already planned to cover the refresher material every year instead of every two years. This should make it easier for members who have to miss an occasional training session.

How can I take a refresher course?

If you wish to take a refresher course, you should approach either an EMT instructor or your district training coordinator to find out when courses will take place near you. More than 60 EMTs are qualified to coordinate a refresher course or EMT-B course (the requirements are the same to coordinate either course).

The refresher curriculum became available only recently, so there have been only a few courses so far. We expect that the number of courses will increase in the near future as demand for them grows.

If I get CE instead of attending a refresher course, do I have to get a certain number of credits through a certified instructor-coordinator?

Not yet. The instructions on the new CE form specify that at least ten hours of CE must be taught by a certified instructor-coordinator (IC). When the forms were printed, the EMS Office anticipated getting a new computer database that would allow the Department of Health to certify ICs. That database does not exist yet, so the Department is not certifying ICs yet. Only after ICs are certified and there are sufficient ICs around the state will this requirement be enforced.

How do I get credit for taking a transition course?

Taking a transition course fulfills one year's CE requirement. On the old one-year form, put it under Section D, EMS Sessions. The only other education requirement you need to fulfill is renewal of your CPR provider card.

On the new form, write it in next to the 16 specified hours in Section II. You still need to get eight additional hours of CE (as described above) and renew your CPR provider card.

When I recertify, will I get a one-year EMT card or a two-year EMT card?

You will get a two-year card. The only people getting one-year cards are some EMTs from other states who gained Vermont certification through reciprocity. For more information about reciprocity, call the EMS Office.

I want to test with other people on my squad. Can I test at a different time?

Yes. You can now recertify up to twelve months early without losing any time. For example, suppose you are due to recertify in June 1999. Your district is planning to hold a recert exam in January, not June. If you recertify in January, you will get a new EMT card that expires in June 2001, not January 2001.

You can also request an extension of your EMT certification by submitting a completed extension request form (available from the EMS Office) **before** your certification expires.

EMS cannot grant extensions for certifications that are already expired. An extension gives you six more months to take the recertification exam.

If you are an EMT-I, be sure to submit your EMT-I CE with the extension request to keep your EMT-I certification current.

The Department of Health does not grant extensions for the purpose of gaining additional CE, to those who have failed the recertification exam or to EMTs who gained Vermont certification through reciprocity.

How much credit do I get toward EMT-B recertification for completing an EMT-Intermediate course?

Completion of an EMT-Intermediate course entitles you to claim the six hours of CE required for the preparatory, airway and patient assessment areas of Section II.

If I become an EMT-Intermediate, what will my EMT-I expiration date be?

Your EMT-I expiration date will be the same as your EMT-B expiration date. If this gives you less than two years of EMT-I certification, the amount of CE you need to recertify will be prorated.

For example, if you passed the EMT exam on May 15, 1997 and became an EMT-I on November 15, 1997, your new card will show both your EMT-B and EMT-I certifications expiring May 31, 1999. Because you received only three-fourths of the usual certification period of two years, you will need to submit only three-fourths of the usual CE required for EMT-I renewal.

How can I regain my EMT certification if it has expired?

An EMT-B whose certification lapsed for less than one year can get reinstated simply by completing the recertification requirements that were due previously. EMTs no longer have to gain additional continuing education (CE). The new card will expire two years from when you take the refresher exam.

A former EMT-B whose certification expired more than one year but less than three years ago needs to complete a refresher course and pass the refresher exam. Someone whose certification expired more than three years ago must complete an EMT-B course and pass the certification exam. For more information, see the Training Update column in the June 1998 issue of *Vermont EMS Today.*

My squad covers towns in both Vermont and New Hampshire, so I maintain EMT certification in both states. Do I have to take both states' recert exams?

No. Vermont EMS will accept a renewed National Registry card as evidence of completing equivalent education and testing. National Registry renewal requirements are described below. Since New Hampshire requires an EMT to have a National Registry card, this should make recertification much easier for EMTs who maintain certification in both states. Providers in this situation must still meet the other recertifica-

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SPECIAL PROJECT UPDATE

EMSC System Enhancement Grant

On October 1, the Department of Health was awarded the final year of funding for the EMSC System Enhancement Grant. This funding will support the following EMSC activities:

* Delivery of education and training programs at the service, district and state level.
* Participation in the Vermont Child Fatality Review Committee.
* Involvement in injury prevention activities.
* Development of the pediatric component of state protocols and certification exam.
* Support of the second phase of the Pediatric Office Resuscitation Project (this phase will deliver pediatric resuscitation equipment and training to family practice offices and clinics throughout Vermont).
* Serving as a resource for EMS organizations.

Please contact Patrick Malone for additional information.

Emergency Department Pediatric Resuscitation Project

The Children's Miracle Network has awarded a grant to Barry Heath, MD to increase the capabilities of emergency departments in Vermont to manage pediatric resuscitations. The project will provide each emergency department with training equipment and an educational program. Dr. Heath will be assisted in the project by Wayne Misselbeck, MD, Jean Coffey, RN, Jim Courtney and Patrick Malone.

Dr. Heath has emphasized the importance of the prehospital phase of care in all of his projects. He will be inviting local EMS organizations to participate in the program as he and his team travel to each emergency department in the state. For more information on this project, contact Patrick Malone at the EMS Office.

Telemedicine Conference

The New England Emergency Medical Services for Children Telemedicine Conference was presented on October 2. The event drew over 125 individuals who participated in six sites throughout New England and Washington, DC. It was the first time that videoconference technology was used to present a regional EMS continuing education program. Approximately half of the participants attended sites at Fletcher Allen Health Care in Burlington and Dartmouth Hitchcock Medical Center in Lebanon, NH. The program was presented by the Initiative for Rural Emergency Medical Services at the University of Vermont through a grant from the federal Bureau Of Maternal & Child Health. It demonstrated that distant learning through the use of technology increases the availability and lowers the cost of continuing medical education. Next year's conference is tentatively scheduled for Friday, September 24, 1999.

Child Restraints

One of the most interesting presentations at the telemedicine conference was "Pediatric Restraint for Ambulance Transport: A Need for Dynamic Standards" by Nadine Levick, MBBS, MD. Dr. Levick has conducted research on ambulance crashes and the methods and equipment employed to restrain children. Her presentation emphasized the need for research into how pediatric patients should be transported in ambulances. She stressed that any restraint should be used in conjunction with safe driving techniques, driver training and the proper securing of personnel and equipment in the back of ambulances.

The EMS office is interested in learning how services address pediatric transport in Vermont. If your service has a policy or standard operating procedure on how to transport a pediatric patient, please contact Patrick Malone.

Emergency Medical Service Instructor's Course

In September and October the Emergency Medical Service Instructor Course was presented by the Initiative for Rural Emergency Medical Services at the University of Vermont. The Governor's Highway Safety Program funded the program with a grant. The course is modeled on the New England Council for Emergency Medical Services Instructor Course. The course coordinator was Joann LeBrun of Tri-County EMS in Maine. Greg Thweatt of the University of Vermont was the lead instructor.

Eleven individuals, representing seven of Vermont's thirteen emergency medical services districts, successfully completed the course and a course coordinator's program presented by Mike O'Keefe. The forty hour program will be presented over three weekends in the winter and again in June. For more information, contact the local district training coordinator, or Mike O'Keefe at the EMS office.

Congratulations to the eleven graduates: Jim Baraw, Julia Bowen, Peri Champine, Bill Clark, Larry Feldstein, Russ Ford, Scott Gagnon, Frank Mugavin, Keith Robinson, Arleine Torre and Barb Wagner.

Happy Holidays

I would like to extend my best wishes to all of my friends and colleagues in emergency services for a safe and happy holiday season. Peace.

— Patrick T. Malone

tion requirements of Vermont-based EMTs such as affiliation with a Vermont licensed service.

How can I become a Nationally Registered EMT?

The answer to this question depends on when you became an EMT and when you last took the recertification exam.

If you are a Vermont EMT who completed the course and passed the National Registry exam within the last twelve months but did not get National Registration, send the letter and the check to the National Registry now.

If you are a Vermont EMT who recertified and passed the Vermont recertification exam within the last twelve months, you need to complete an EMT-B refresher course (or transition course) and pass the National Registry written exam. Contact the EMS Office to find out when the exam will be given locally and how to register for it.

If you are a Vermont EMT who passed the Vermont recertification exam more than twelve months ago, you need to complete an EMT-B refresher course, pass the Vermont practical exam and then pass the National Registry written exam. This means you can take the National Registry written exam any time in the twelve months after you pass the Vermont refresher exam. Contact the EMS Office to find out when the exam will be given locally and how to register for it.

How do I renew my National Registry card?

The National Registry sends reregistration materials in November to all those whose cards expire the following March. In the reregistration materials is a form you need to complete which asks for information about the refresher course you took and the 48 additional hours of CE the Registry requires. EMTs reregistering in 1998 and 1999 may substitute an EMT-B transition course for a refresher course. You will also need to submit the reregistration fee.

These are the most commonly asked questions the EMS Office has received about the changes in EMT certification and recertification. There will undoubtedly be some additional changes as new questions and situations arise. If you have another question or you have some unusual circumstances, please call the EMS Office.

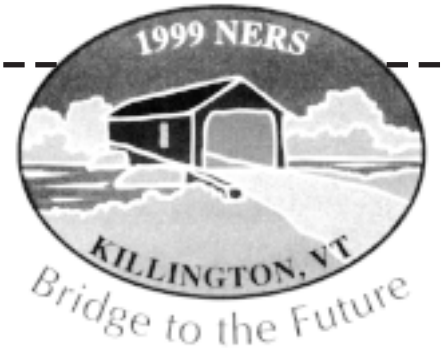
Instructor Development

Another instructor course took place in September and October, qualifying eleven more EMTs to coordinate transition and certification courses. Two more EMS Instructor courses will take place before the end of fiscal year 99. As soon as dates and locations are firm, Vermont EMS will notify district officials.

— Mike O'Keefe

Number of Providers Trained in 1994 EMT-B Curriculum as of 9/30/98

	Fiscal 1996	Fiscal 1997	Fiscal 1998	Fiscal 1999	Total	Grand Total
EMTs who have completed 1994 EMT-B course	37	222	270	14	543	
EMTs who have completed EMT-B transition course	173	729	322	13	1237	1780
Number of transition courses	10	49	20	1	80	



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Public Access Defibrillation: The Ghost and the Machine

PART I

A man in a business suit collapses on a busy street. A woman passing by sees him go down and rushes over to him. Finally getting to use the skills she learned in her CPR class, she calls out for someone to call 9-1-1 and assesses the man. After determining that he is unresponsive, apneic and pulseless, she begins CPR.

This is an example of a story that has a good chance of having a happy ending. A healthy person suffers a sudden cardiac arrest in front of a witness who activates the EMS system, determines he is in cardiac arrest and begins CPR. Early access and early CPR, the first two links in the chain of survival, are as good as they can be. But what about early defibrillation, the third link in that chain? Should this patient receive his first defibrillatory shock from an EMT on an ambulance or a first response vehicle? Should there be an automated external defibrillator (AED) in a nearby building where a security guard can respond with it? Should there be an AED on the street corner for any layperson to use, like a fire extinguisher?

Recent media reports and statements from the American Heart Association and others have publicized and promoted the concept of public access defibrillation (PAD)[1-4]. The goal of PAD is to improve survival from cardiac arrest by training non-medically trained individuals to use an AED. These individuals might be police officers, security guards, lifeguards or laypeople.

At the same time that organizations and individuals are promoting PAD, the American Heart Association has called for more study of this matter[1-3] to determine if, and under what circumstances, PAD might actually be successful. Past attempts to make significant improvements in resuscitation rates have sometimes fallen short of their stated goals[5-7]. Only a limited number of EMS systems have published survival rates in the desirable range. Typically, these success stories share several characteristics. Their populations are in suburban or urban areas where the population is dense, but not concentrated in high rise buildings where "vertical" response time is a factor, and traffic is not at a standstill from gridlock ("horizontal" response time). The links in the chain of survival (early access, early CPR, early defibrillation, early advanced care) are uniformly strong. Solid medical direction works in concert with a robust data collection system. Public education takes place regularly, so that laypeople know when and how to call for help, and a sizable number of them know CPR. Several other EMS systems have published less than enviable results after implementing EMT-defibrillation programs. They typically lacked one or more of the factors described above. If we wish to achieve our goal of resuscitating more people from cardiac arrest, and avoid the mistakes made by others, we must learn as much as we can from history and proceed carefully in a timely, responsible manner.

Part I of this series will look at the results of the few published papers that scientifically evaluate defibrillation by non-EMS responders outside of hospitals. Future installments will look at case reports, preliminary reports, implementation issues, some of the speculation published about this topic and some conclusions about the future of PAD.

A Little History

In the 1970s, one of the things that set paramedics apart from EMTs was their ability to interpret a rhythm on an electrocardiogram (ECG) and defibrillate a patient in cardiac arrest. At the end of that decade, Seattle and surrounding King County, Washington, showed that EMTs could also learn to recognize ventricular fibrillation (VF) on an ECG monitor and defibrillate[8]. A few years later, automated external defibrillators made defibrillation even easier and less expensive for EMTs to provide[9]. Recent news reports have described how a number of companies have purchased AEDs and trained their non-medical employees to use them.

But what do we really know about defibrillation by non-healthcare providers? To reduce confusion, we will use the term "expanded access defibrillation" to denote use of an AED by someone who is not certified or licensed to provide healthcare. This would include not just members of the lay public, but also police officers, flight attendants and others.

Studies of Expanded Access Defibrillation

Only four studies published in refereed medical journals have looked at the effects of training selected individuals who are not health care providers and equipping them with AEDs. One of the papers dealt with an airline, two with police departments and another with family members of high risk cardiac patients.

Qantas Airways, based in Australia, was one of the first airlines to place AEDs on their aircraft and in their terminals[10]. They trained selected crew members (equivalent to lead flight attendants) in use of the AED. They also trained all of their crews in cardiopulmonary resuscitation (CPR). Thirty-three percent of patients who had a witnessed VF arrest on a plane survived. Twenty-three percent of such patients who arrested in terminals survived.

This study is interesting in several ways. Air travel is almost unique in restricting the ability of those on the carrier from stopping to get help when it is needed. Descending from 30,000 feet takes a significant amount of time, even in an emergency. This assumes that the plane is near an airport, certainly not the case when travel takes place over the Pacific Ocean.

Some individuals have called for everyone to receive training in AED use. Contrary to this philosophy, Qantas trained only selected members of the crew to use the machine (the American equivalent of the lead flight attendant). Retraining in management of cardiac arrest was incorporated into regularly scheduled training sessions for the crew. When arrests occurred in the air, they were usually unwitnessed ("Oh, he's only sleeping."). This led to a disappointing rate of witnessed VF of only 22 percent. Nonetheless, two of the six passengers in this category survived, with no neurological deficits.

Where airlines can apparently save more lives is in a busy terminal. Almost all of these arrests (17 out of 19) were witnessed VF, with four (23%) of the patients in this category surviving in good neurological condition. Training and equipping selected crew members has clearly been beneficial for Qantas and its passengers.

In 1990, Rochester, Minnesota, began equipping police cars with AEDs and training police officers in use of the devices[11]. During a period spanning almost five years, police arrived before paramedics at 31 cardiac arrests where the initial rhythm was VF. All 31 received shocks from the AED appropriately. Thirteen (42%) of these patients regained a spontaneous pulse without any advanced life support (ALS) interventions; all survived. Of the remaining 18 who received additional ALS care from paramedics, five (28%) left the hospital alive. All survivors were in good neurological condition on discharge. These figures compared favorably to those from patients first shocked by paramedics.

The police officers in this study were already trained as first responders before they learned to use an AED. The community is densely populated, with centralized 911 dispatch and a track record of strong medical direction for EMS activities. Their survival rate from witnessed VF of 58 percent is a testament to the power of strengthening all the links in the chain of survival.

Police in seven suburban communities near Pittsburgh, Pennsylvania, also have learned to defibrillate[12]. The communities involved covered 46 square miles with a population of 145,000. Over a period of three years, they arrived before EMS in 172 cases of adults in nontraumatic cardiac arrest outside of a nursing home or other health care facility. They applied the AED to 118 (69%) of the patients. Reasons for failure to use the AED in these 54 cases included imminent expected arrival of EMS, delayed patient access and leaving the AED in the cruiser. VF was present in 49; they defibrillated 46. The police did not administer shocks to three patients in VF because of airway problems, inability of the AED to read the rhythm because of poor electrode contact and failure of the LCD screen to work at low temperature.

A total of 127 patients in VF received shocks from both police and EMS. Sixty-six (52%) regained a spontaneous pulse and 18 (14.2%) survived to be discharged from the hospital. These figures were compared to a historical control period consisting of the 25 months before the police were able to use AEDs. During that time, 80 patients in VF were shocked only by EMS, with 29 (36%) regaining a spontaneous pulse and 5 (6.3%) discharged from the hospital. There was no statistically significant difference in survival between the two groups. When only the patients in VF defibrillated by police are considered, however, patients were ten times more likely to survive than those who were first shocked by EMS. This difference was statistically significant.

Even though police officers routinely responded with EMS to medical emergencies, there was apparently some reluctance, or at least lack of enthusiasm, on the part of the officers to use the AED. This is reflected in the fact that they did not apply the AED more than 31 percent of the time when they arrived first. The failure of the officers to shock three patients in VF (out of 49) calls into question the adequacy of their training or the depth of their commitment to the program. When police did deliver the shock, patients were much more likely to survive than if they had to wait for EMS. Police officers in this study did not have any prior medical training.

The only published study to look at how well family members use AEDs took place in King County, Washington[13]. Researchers there screened family members of survivors of cardiac arrest. Of 118 eligible patients, 97 agreed to participate. Reasons for refusal to participate included health problems (in either the patient or the spouse) and sentiments that extraordinary lifesaving efforts were unwanted or inappropriate.

Patients and their families were randomized to receive training in either AED use or just CPR. The study originally called for a patient in the AED group to have the device for just one year. Because cardiac arrests were so infrequent, however, the investigators allowed patients to keep the machine after that period if desired. Members of the CPR group were also allowed to cross over into the AED group after one year.

In September 1987, after about five and a half years, the researchers found that 59 patients had received AEDs and 38 were in the control (CPR only) group. There were 10 out-of-hospital cardiac arrests in the AED group. Family members used the machine in six of these cases. Only two patients were in VF. Only one patient survived, a male with severe neurological deficits, who died four months later. In the control group, there was also one survivor, a male who was shocked out of VF by paramedics.

The King County study is the only one published to date evaluating defibrillation by people who are not healthcare providers and who are not expected to respond to emergencies because of their occupation. Since the study participants were all family members of high risk cardiac patients, they are not exactly the same as untrained laypeople, but they are very close. The disappointing survival rate (statistically equivalent to that of the group without an AED) is unlikely to be a result of poor training or inadequate medical direction since these same investigators have reported excellent results from defibrillation in their EMS system. Instead, we must question whether public access defibrillation will truly work when the people handling the AED are members of the lay public.

CONTINUED ON PAGE 12

Comments

No one disputes the assertion that the best treatment for cardiac arrest is early defibrillation. Where the disagreement occurs is in determining how to provide it. What can we learn from the systems that have expanded access to defibrillation beyond EMS providers?

Public access defibrillation, it seems, is a misnomer, an inaccurate title. For all the talk about laypeople using AEDs, the only clear success to date in expanding defibrillation beyond healthcare providers is in occupations expected to respond to medical emergencies. Even then, there is no guarantee of success. Perhaps those professionals who have some medical background (e.g., flight attendants and police officers with prior first aid training) may be more likely to succeed in this area.

In future installments of this series, we will look at what has been published about potential PAD implementation and predicted results, ongoing studies and some conclusions we can draw from experience and the published literature. ■

—Mike O'Keefe

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